

TABLE A
Important Details About 18 Hazardous Waste Sites

DETAILS	California	Colorado			Florida	Kansas	Kentucky	Louisiana
	CASAAD	Durango	Grand Junction	Rifle	Hollingsworth	Cherokee County	Paducah	Bonfouca
# Entries	227	4,811	686	10,150	62	1,418	1,029	9,409
# Months Payroll	15	20	5	68	18	41	13	28
Total Gross Pay	\$201,887	\$2,505,794	\$459,867	\$6,749,486	\$38,711	\$547,257	\$464,339	\$5,173,534
Average Gross Pay/Month	\$13,459	12,529	\$91,973	\$99,257	\$1,817	\$13,348	\$35,718	\$184,769
Total Standard Hours	5,148	147,237	22,434	334,093	1,232	38,066	24,257	266,459
Average Standard Hours/Month	343	7,362	4,487	4,913	68	928	1,865	9,516
Total Overtime Hours	1,124	6,944	1,853	76,850	393	4,282	2,419	63,995
Average Overtime Hours/Month	75	347	371	1,130	22	104	186	2,286
Total Hours	6,272	154,181	24,287	410,944	1,624	42,348	26,677	330,455
Overtime as % of Total hours	18%	5%	8%	19%	24%	10%	9%	19%
Average Total Hours/Month	418	7,709	4,857	6,043	90	1,033	2,052	11,802
Average Hourly Rate	\$23.85	\$15.67	\$12.66	\$15.18	\$9.49	\$12.05	\$18.81	\$13.93

Source: Ruth Ruttenberg & Associates, Inc. Data Base.

TABLE A, Continued
Important Details About 18 Hazardous Waste Sites

DETAILS	Missouri	New Jersey				New Mexico	Ohio	Pennsylvania	Tennessee	Washington	TOTALS
	Kem-Pest	Bog Creek	BROS	Lipari	Lone Pine	Shiprock	New Lyme	Moyer	K-25	Tacoma	
# Entries	114	2,828	13,995	4,629	20,859	4,360	3,817	1,070	1,844	459	81,767
# Months Payroll	10	18	54	29	31	30	28	15	17	15	455
Total Gross Pay	\$82,282	\$2,222,489	\$14,564,763	\$4,052,419	0	\$1,132,310	\$2,789,360	\$1,142,272	\$705,447	\$455,973	\$43,288,190
Average Gross Pay/Month	\$8,228	\$123,472	\$269,718	\$139,739	*	\$37,744	\$99,620	\$76,151	\$42,197	\$30,398	\$95,152
Total Standard Hours	3,464	92,347	533,399	158,163	*	77,119	126,318	32,449	43,557	14,665	1,920,407
Average Standard Hours/Month	346	5,130	9,867	5,454	*	2,571	4,511	2,163	2,562	978	4,221
Total Overtime Hours	1,016	25,428	123,073	11,810	*	1,268	22,486	7,680	7,000	3,587	361,208
Average Overtime Hours/Month	102	1,413	2,278	407	0	42	803	512	412	239	794
Total Hours	4,480	117,775	656,472	169,974	0	78,387	148,804	40,129	50,556	18,252	2,281,617
Overtime as % of Total hours	23%	22%	19%	7%	*	2%	15%	19%	14%	20%	16%
Average Total Hours/Month	448	6,543	12,145	5,861	0	2,613	5,314	2,675	2,974	1217	5,015
Average Hourly Rate	\$15.55	\$32.50	\$20.23	\$20.69	*	\$12.82	\$17.41	\$18.36	\$14.70	\$22.55	\$18.40

Source: Ruth Ruttenberg & Associates, Inc. Data Base.

TABLE B
Categories of Site Types or Activities at Sites Studied

Categories	Bog Creek	Bayou Bonfouca	BROS	Cherokee/ Galena	Durango	Grand Junction	Hollins .	Kem- Pest	Lipari	Lone Pine	Moyer	New Lyme	Paducah	Rifle	SAAD	Shiproc k	Tacoma	K-25
Landfill									X	X	X	X						
Surface Impoundments	X		X															
Wellfield	X						X											
Leaking Container			X												X			
Asbestos																		
Radiological Tailings					X	X							X	X		X		
Chemical Manufacturing		X						X									X	X
Electrical															X			
Wood Preserving																		
Waste Oil			X															
Manufacturing							X								X			
Plating																		X
Metal Working															X			
Drum Recycling																		
Mining				X	X	X								X		X		
TNT Processing																		

Key:

SAAD - Sacramento Army Depot Hollins. - Hollingsworth

¹ Categories as defined by E.W. Colglazier, T. Cox, and K. Davis, University of Tennessee, Waste Management Research and Education Institute, Estimation of Resource Requirements for NPL Sites, December 1991.

TABLE C
Remedial Action Categories Used for Sites Studied

Remedy	Bog Creek	Bayou Bonfouca	BROS	Cherokee/ Galena	Grand Junction	Hollingsworth	Kem-Pest	Lipari	Lone Pine	Moyer	New Lyme	Paducah	Rifle	SAAD	Shiprock	Tacoma	K-25
Institutional Controls				X			X									X	X
Containment		X						X	X	X	X						X
Water Collection/Treatment/ Discharge	X	X				X				X	X	X		X		X	
Soil/Sediment Removal, Low Intensity Treatment								X						X			X
Soil Sediment Removal, High Intensity Treatment	X	X	X														
In Situ Treatment						X		X						X			
Soil/Sediment Removal and Landfilling				X	X					X	X		X		X	X	X
Water Collection/Discharge to Existing Facility																	

Key:
SAAD - Sacramento Army Depot

¹ Remedial Action Categories as defined by E.W. Colglazier, T. Cox, and K. Davis, University of Tennessee, Waste Management Research and Education Institute, Estimation of Resource Requirements for NPL Sites, December 1991.

TABLE D
Gross Pay by Predominant Category at 17 Sites

CATEGORY	California	Colorado			Florida	Kansas	Kentucky	Louisiana
	SAAD	Durango	Grand Junction	Rifle	Holli.	Cherokee County	Paducah	Bonfouca
Asbestos	\$5,271	-	-	-	-	-	-	-
Carpenter	-	-	-	\$68,301	-	\$4,920	\$89,496	\$238,363
Cement	-	-	-	\$13,986	-	-	\$9,023	\$50,693
Driver	\$294	\$744,370	\$192,333	\$1,968,882	-	\$263	\$7,009	\$84,284
Electrician	\$1,959	\$354	-	\$73,273	-	\$15,003	\$30,526	\$202,898
Iron Worker	-	-	-	\$1,638	-	\$9,639	\$64,813	\$65,349
Laborer	\$90,953	\$68,934	\$16,024	\$1,525,712	\$27,283	\$189,817	\$87,173	\$539,944
Mechanic	-	\$186,542	\$42,601	\$407,538	-	-	-	\$615
Operator	\$80,939	\$1,041,982	\$35,065	\$2,375,080	\$4,710	\$154,043	\$67,744	\$963,013
Plumber/Pipe fitter	-	-	-	\$281	-	\$2,694	\$30,268	\$225,948
Other	\$22,471	\$463,612	\$173,842	\$314,795	\$6,717	\$170,880	\$78,289	\$2,802,427
Total:	\$201,887	\$2,505,794	\$459,865	\$6,749,486	\$38,710	\$547,259	\$464,341	\$5,173,534

Source: Ruth Ruttenberg & Associates, Inc. Data Base.

Note: For more details about "categories" check individual tables

Key: SAAD - Sacramento Army Depot Holli - Hollingsworth Solderless Terminal Company

TABLE D, Continued
Gross Pay by Predominant Category at 17 Sites

CATEGORY	Missouri	New Jersey			New Mexico	Ohio	Pennsylvania	Tennessee	Washington	TOTALS
	Kem-Pest	Bog Creek	BROS	Lipari	Ship-Rock	New Lyme	Moyer	K-25	Tacoma	
Asbestos	-	-	\$32,116	\$24,212	-	-	-	\$39,323	-	\$100,922
Carpenter	\$2,811	\$194,279	\$617,690	\$211,802	\$1,655	\$18,649	-	\$74,708	\$64,203	\$1,586,877
Cement	-	\$12,832	-	\$86,599	\$824	\$6,212	-	\$737	-	\$180,006
Driver	\$1,266	\$6,866	\$683,779	\$59,588	\$114,402	\$474,667	-	\$1,653	\$1,159	\$4,340,815
Electrician	\$328	\$229,277	\$437,646	\$611,054	-	\$4,449	-	\$11,435	\$91,394	\$1,709,506
Iron Worker	-	\$34,962	\$274,820	\$306,722	-	\$62,970	-	\$3,204	-	\$824,117
Laborer	\$45,713	\$272,717	\$3,055,600	\$552,060	\$239,782	\$558,505	\$481,340	\$306,509	\$118,951	\$8,177,017
Mechanic	-	\$2,404	\$1,035,394	\$3,630	\$1,339	\$4,068	\$760	\$1,958	-	\$1,686,849
Operator	\$6,732	\$494,809	\$6,135,712	\$423,524	\$668,196	\$955,352	\$567,082	\$33,732	\$8,174	\$14,015,889
Plumber/Pipe fitter	-	\$173,715	\$217,383	\$1,109,419	-	\$18,999	-	\$55,004	\$6,145	\$1,839,856
Other	\$25,432	\$800,629	\$2,074,623	\$663,811	\$106,112	\$685,489	\$93,090	\$177,184	\$165,947	\$8,825,350
Total:	\$82,282	\$2,222,490	\$14,564,763	\$4,052,421	\$1,132,310	\$2,789,360	\$1,142,272	\$705,447	\$455,973	\$43,288,194

Source: Ruth Ruttenberg & Associates, Inc. Data Base.

NOTE: For more details about "categories" check individual tables

Key: BROS - Bridgeport Rental & Oil Services.

TABLE E
Percent of Gross Pay at 11 NPL Sites, by Predominant Category

CATEGORY	California	Florida	Kentucky	Louisiana	Missouri	New Jersey			Ohio	Pennsylvania	Tennessee	TOTAL
	CASAAD	Holli.	Paducah	Bonfouca	Kem-Pest	Bog Creek	BROS	Lipari	New Lyme	Moyer	K-25	
Carpenter	-	-	19%	5%	3%	8%	4%	5%	1%	-	11%	5%
Cement	-	-	2%	1%	-	1%	-	2%	0%	-	0%	1%
Driver	-	-	1%	2%	2%	-	5%	1%	17%	-	0%	4%
Electrician	1%	-	6%	4%	0%	10%	1%	15%	0%	-	2%	5%
Iron Worker	-		14%	1%	-	2%	2%	8%	2%	-	0%	3%
Laborer	45%	70% ¹	19%	10%	56%	12%	21%	14%	20%	42%	43%	19%
Mechanic	-	-	-	0%	-	0%	7%	0%	0%	0%	0%	3%
Operator	40%	12%	16%	19%	8%	27%	42%	10%	34%	50%	5%	31%
Plumber/ Pipe Fitter	-		6%	4%	-	8%	2%	27%	1%	-	8%	6%
Other	13%	17%	16%	54%	31%	30%	16%	16%	25%	8%	31%	24%
TOTAL:²	100%	99%	99%	100%	100%	98%	100%	98%	99%	100%	100%	101%

Source: Ruth Ruttenberg & Associates, Inc. Data base.

¹ Laborer category in this instance is primarily industrial laborer rather than construction laborer.

² Total percent is overall for all crafts, even those not included in this table. Bog Creek total percent is high due to issues of overtime and call pay.

TABLE F
Average Hourly Earnings by Predominant Category of Worker at 17 Sites

Categories	California	Colorado			Florida	Kansas	Kentucky	Louisiana
	CASAAD	Durango	Grand Junction	Rifle	Hollingsworth	Cherokee County	Paducah	Bonfouca
Asbestos	\$10.69	-	-	-	-	-	-	-
Carpenter	-	-	-	\$16.38	-	\$15.12	\$19.81	\$16.60
Cement	-	-	-	\$17.66	-	-	\$19.17	\$15.58
Driver	\$26.72	\$16.27	\$12.40	\$16.60	-	\$7.52	\$16.53	\$13.89
Electrician	\$32.74	\$18.14	-	\$20.79	-	\$17.94	\$21.99	\$17.13
Iron Worker	-	-	-	\$17.60	-	\$18.00	\$22.08	\$14.23
Laborer	\$20.09	\$12.45	\$10.85	\$13.40	\$9.32	\$9.62	\$15.32	\$9.50
Mechanic	-	\$16.62	\$13.81	\$17.45	-	-	-	-
Operator	\$32.35	\$16.10	\$13.66	\$15.11	\$10.33	\$12.88	\$19.76	\$16.08
Plumber/Pipe fitter	-	-	-	\$20.10	-	\$20.09	\$23.00	\$19.06
Average	\$23.85	\$15.67	\$12.66	\$15.18	\$9.49	\$12.05	\$18.81	\$13.93

Source: Ruth Ruttenberg & Associates, Inc. Data Base.

KEY:

CASAAD - Sacramento Army Depot

Hollingsworth - Hollingsworth Solderless Terminal Company

¹ Average is overall for all crafts, even those not included in this table. Bog Creek average is especially high due to issues of overtime and call pay.

TABLE F, Continued
Average Hourly Earnings by Predominant Category of Worker at 17 Sites

Categories	Missouri	New Jersey			New Mexico	Ohio	Pennsylvania	Tennessee	Washington	Average Hourly rate
	Kem- Pest	Bog Creek	BROS	Lipari	Shiprock	New Lyme	Moyer	K-25	Tacoma	
Asbestos	-	-	\$24.81	\$22.15	-	-	-	\$14.93	-	\$19.58
Carpenter	\$20.47	\$25.05	\$24.70	\$23.21	\$16.19	\$18.86	-	\$15.79	\$24.43	\$22.14
Cement	-	\$21.64	-	\$22.26	\$14.21	\$19.65	-	\$16.37	-	\$19.68
Driver	\$18.48	\$14.30	\$18.52	\$17.76	\$13.51	\$15.01	-	\$10.87	\$19.61	\$16.36
Electrician	\$19.20	\$26.05	\$21.15	\$22.20	-	\$20.53	-	\$15.71	\$25.87	\$21.90
Iron Worker	-	\$24.02	\$22.02	\$21.72	-	\$19.83	-	\$16.56	-	\$21.13
Laborer	\$15.15	\$24.49	\$17.87	\$16.60	\$10.80	\$16.26	\$17.57	\$12.36	\$19.47	\$15.80
Mechanic	-	\$16.81	\$17.31	\$23.52	\$14.22	\$20.50	\$23.25	\$17.73	-	\$17.19
Operator	\$16.25	\$40.65	\$24.63	\$22.21	\$14.07	\$19.04	\$21.20	\$15.58	\$19.16	\$21.09
Plumber/Pipe fitter	-	\$25.95	\$22.47	\$20.83	-	\$20.73	-	\$17.77	\$21.30	\$21.23
Average	\$15.55	\$32.50	\$20.23	\$20.69	\$12.82	\$17.41	\$18.36	\$14.70	\$22.55	\$18.40

Source: Ruth Ruttenberg & Associates, Inc. Data Base.

KEY: BROS - Bridgeport Rental & Oil Services

¹ Average is overall for all crafts, even those not included in this table. Bog Creek average is especially high due to issues of overtime and call pay.

TABLE G
Site Categories and Activities¹ at 12 NPL Sites

Categories	California	Florida	Kentucky	Louisiana	Missouri	New Jersey				Ohio	Pennsylvania	Tennessee
	SAAD	Hollings.	Paducah	Bonfouca	Kem-Pest	Bog Creek	BROS	Lipari	Lone Pine	New Lyme	Moyer	K-25
Landfill								X	X	X	X	
Surface Impoundments				X		X	X					
Wellfield						X						
Leaking Container	X						X					
Asbestos												
Radiological Tailings			X									
Chemical Manufacturing					X							X
Electrical	X											
Wood Preserving												
Waste Oil							X					
Manufacturing	X	X										
Plating												X
Metal Working	X											
Drum Recycling												
Mining												
TNT Processing												

Source: Ruth Ruttenberg & Associates, Inc. Data base.

Key: Hollingsworth. - Hollingsworth Solderless Terminal Company

SAAD -

Sacramento Army Depot

¹ Categories as defined by E.W. Colglazier, T. Cox, and K. Davis, Estimation of Resource Requirements for NPL Sites, Waste Management Research and Education Institute, University of Tennessee, December 1991.

TABLE H
Gross Pay by Predominant Category at 11 NPL Sites¹

CATEGORY	California	Florida	Kentucky	Louisiana	Missouri	New Jersey			Ohio	Pennsylvania	Tennessee	TOTAL
	SAAD	Holli.	Paducah	Bonfouca	Kem-Pest	Bog Creek	BROS	Lipari	New Lyme	Moyer	K-25	
Asbestos	\$5,271	-	-	-	-	-	\$32,116	\$24,212	-	-	\$39,323	\$100,922
Carpenter	-	-	\$89,496	\$238,363	\$2,811	\$194,279	\$617,690	\$211,802	\$18,649	-	\$74,708	\$1,447,798
Cement	-	-	\$9,023	\$50,693	-	\$12,832	-	\$86,599	\$6,212	-	\$737	\$166,096
Driver	\$294	-	\$7,009	\$84,284	\$1,266	\$6,866	\$683,779	\$59,588	\$474,667	-	\$1,653	\$1,319,406
Electrician	\$1,959	-	\$30,526	\$202,898	\$328	\$229,277	\$437,646	\$611,054	\$4,449	-	\$11,435	\$1,529,572
Iron Worker	-	-	\$64,813	\$65,349	-	\$34,962	\$274,820	\$306,722	\$62,970	-	\$3,204	\$812,840
Laborer	\$90,953	\$27,283	\$87,173	\$539,944	\$45,713	\$272,717	\$3,055,600	\$552,060	\$558,505	\$481,340	\$306,509	\$6,017,797
Mechanic	-	-	-	\$615	-	\$2,404	\$1,035,394	\$3,630	\$4,068	\$760	\$1,958	\$1,048,829
Operator	\$80,939	\$4,710	\$67,744	\$963,013	\$6,732	\$494,809	\$6,135,712	\$423,524	\$955,352	\$567,082	\$33,732	\$9,733,349
Plumber/ Pipe fitter	-	-	\$30,268	\$225,948	-	\$173,715	\$217,383	\$1,109,419	\$18,999	-	\$55,004	\$1,830,736
Other	\$22,471	\$6,717	\$78,289	\$2,802,427	\$25,432	\$800,629	\$2,074,623	\$663,811	\$685,489	\$93,090	\$177,184	\$7,430,162
Total:	\$201,887	\$38,710	\$464,341	\$5,173,534	\$82,282	\$2,222,490	\$14,564,763	\$4,052,421	\$2,789,360	\$1,142,272	\$705,447	\$31,437,507

Source: Ruth Ruttenberg & Associates, Inc. Data base.

¹ For portion of each site.

TABLE J
O&M Costs Associated with Remediation

State	Site	Technology	Capital Cost (1000s)	Annual Operating Cost (1000s)	1 yr Operating as % of Capital
Arkansas	Evelson AFB	Bioremediation	\$758	\$177	23%
California	McClellan AFB	Pump & Treat	\$4,000	\$1,240	31%
Colorado	Lowry AFB	Bioremediation/biovent (UST)	\$29	\$33	114%
Colorado	Lowry AFB	Bioremediation-land treatment (UST)	\$104	\$76	73%
Michigan	Amoco Petrol. Pipeline	Groundwater Remed	\$672	\$475	71%
Minnesota	Twin Cities Army Munition Plant	Pump & Treat	\$8,000	\$589	7%
Missouri	Kansas City Plant (DOE)	Pump & Treat	\$1,383	\$355	26%
South Carolina	Savannah River (DOE)	In Situ air stripping	\$259	\$220	85%
South Carolina	Savannah River (DOE)	Pump & Treat	\$4,103	\$149	4%
Utah	Amcor Precast	Groundwater, spraying	\$157	\$63	40%
Utah	Hill AFB	Bioremediation	\$115	\$24	21%
Virginia	Langley AFB	Pump & Treat	\$570	\$217	38%
Virginia	Langley AFB	Pump & Treat	\$570	\$143	25%

Sources: Doty Carolyn, Amelia Crotwell, and Curtis Travis, Cost Growth for Treatment Technologies at NPL Sites, December 1991; EPA and Member Agencies of the Federal Remediation Technologies Roundtable, Remediation Case Studies: Groundwater Treatment, March 1995; EPA and Member Agencies of the Federal Remediation Technologies Roundtable, Abstracts of Remediation Case Studies, March 1995; U.S. DOE, Estimating the Cold War Mortgage: The 1995 Baseline Environmental Management Report, March 1995.

TABLE K
Average Hourly Earnings by Category at Eight Removal Sites

DETAILS	REGION 3	REGION 4			REGION 5		REGION 7		TOTAL
	MARTIN	ANDERSON	CAROLINA CREOSOTE II	CHEMET	BERNARD NEAL	SUPERIOR POLISHING	BANNISTER	TURNER SEED	
Chemist/Organic	-	\$46.66	-	\$46.66	-	-	-	\$48.00	\$47.11
Equipment Operator	-	\$35.58	\$45.20	\$35.58	\$39.27	\$36.04	\$34.10	\$34.10	\$37.12
Field Clerk/Typist	\$28.00	\$29.96	-	\$29.96	\$32.41	\$25.20	\$27.02	\$27.02	\$28.51
Foreman	-	-	-	\$34.44	\$34.73	\$37.16	\$39.18	\$39.18	\$36.94
Health & Safety	-	\$39.37	-	\$39.37	-	-	-	-	\$39.37
Industrial Hygienist Safety	-	-	-	-	-	-	\$38.02	\$38.02	\$38.02
Laborer	\$24.00	-	\$34.03	\$30.82	\$27.78	\$29.28	\$28.21	\$28.21	\$28.90
Lab Technician			-	\$26.93	-	-	-	-	\$26.93
Level B	-	-	-	\$6.47	-	-	\$3.38	\$3.38	\$4.41
Level C	-	-	-	-	-	-	\$2.86	\$2.83	\$2.85
Program Auditor			-	\$40.91	-	-	-	-	\$40.91
Program Manager	-	\$55.86	-	\$72.40	-	-	-	-	\$64.13
Response Manager	\$45.00	\$55.86	\$66.86	\$55.86	\$51.84	\$48.43	\$54.61	\$61.36	\$54.98
Secretary	-	\$32.81	-	\$32.81	-	-	-	-	\$32.81
Site & Safety			-	-	-	\$61.94	-	-	\$61.94
T&D Coordinator			-	\$40.15	\$34.73	\$51.90	-	-	\$42.26
Truck Driver	-	-	-	\$34.62	-	\$32.94	\$33.08	\$33.08	\$33.43
AVERAGE HOURLY RATE:	\$32.33	\$43.55	\$42.64	\$36.03	\$36.79	\$40.36	\$31.53	\$31.52	\$36.51

Source: U.S. EPA, Removal Cost Management System and Ruth Ruttenberg & Associates, Inc.

TABLE L
Percent of Total Hours by Predominant Category at Eight Removal Sites

Categories	Martin	Anderson	Carolina Creosote II	Chemet	Bernard Neal	Superior Polishing	Bannister	Turner Seed	TOTAL
Operator	-	21%	73%	28%	17%	24%	6%	0%	0%
Response Manager	48%	18%	21%	16%	19%	13%	25%	0%	0%
Laborer	38%	-	6%	37%	25%	21%	27%	0%	0%
Former	-	-	-	2%	16%	13%	10%	0%	0%
Truck Driver	-	-	-	1%	-	8%	1%	0%	1%
Other	13%	45%	0%	17%	22%	22%	31%	0%	26%
TOTAL	100%	100%	100%	100%	100%	100%	100%	0%	101%

Source: U.S. EPA, Removal Cost Management System and Ruth Ruttenberg & Associates, Inc.

TABLE M
Total Hours by Predominant Category at Eight Removal Sites

Categories	Martin	Anderson	Carolina Creosote II	Chemet	Bernard d Neal	Superior Polishin g	Bannister	Turner Seed	Total
Operator	-	57	370	1,939	245	495	29	131	3,266
Response Manager	47	92	107	1,093	279	284	123	528	2,553
Laborer	37	-	28	2,533	367	438	133	2,152	5,688
Foreman	-	-	-	132	230	265	48	463	1,138
Truck Driver	-	-	-	45	-	160	6	24	235
Other	13	122	-	1,187	319	463	149	2,249	4,502
Total	97	271	505	6,929	1,440	2,105	488	5,547	17,382

Source: U.S. EPA, Removal Cost Management System and Ruth Ruttenberg & Associates, Inc.

TABLE N
Labor Mix at Six DOE Environmental Restoration Sites by Percent of Gross Pay

CRAFT	DURANGO UMTRA	GRAND JUNCTION UMTRA	K-25	PADUCAH	RIFLE UMTRA	SHIPROCK UMTRA
Asbestos	-	-	1%	-	-	-
Bricklayer	-	-	1%	-	-	-
Carpenter	-	-	11%	19%	1%	-
Cement Mason	-	-	-	2%	-	-
Driver	30%	42%	-	1%	29%	11%
Electrician	-	-	2%	7%	1%	-
Iron Worker	-	-	-	14%	-	-
Laborer	3%	3%	43%	19%	23%	23%
Mechanic	7%	9%	0%	-	6%	0%
Operator	42%	8%	5%	15%	35%	64%
Plumber	-	-	-	4%	-	-
Pipe Fitter	-	-	8%	2%	-	-
Roofer	-	-	5%	-	-	-
Sheet Metal	-	-	2%	-	-	-
Other	18%	38%	22%	17%	5%	2%
TOTAL	100%	100%	100%	100%	100%	100%

Source: Ruth Ruttenberg & Associates, Inc. Data Base.

TABLE O
Average Hourly Earnings for Predominant Categories at Six DOE Sites

Categories	Colorado		Tennessee	Kentucky	Colorado	New Mexico
	Durango	Grand Junction	K-25	Paducah	Rifle	Shiprock
Asbestos	-	-	\$14.93	-	-	-
Carpenter	-	-	\$15.79	\$19.81	\$16.38	\$16.19
Cement	-	-	\$16.37	\$19.17	\$17.66	\$14.21
Driver	\$16.27	\$12.40	\$10.87	\$16.53	\$16.60	\$13.51
Electrician	\$18.14	-	\$15.71	\$21.99	\$20.79	-
Iron Worker	-	-	\$16.56	\$22.08	\$17.60	-
Laborer	\$12.45	\$10.85	\$12.36	\$15.32	\$13.40	\$10.80
Mechanic	\$16.62	\$13.81	\$17.73	-	\$17.45	\$14.22
Operator	\$16.10	\$13.66	\$15.58	\$19.76	\$15.11	\$14.07
Plumber/Pipe fitter	-	-	\$17.77	\$23.00	\$20.10	-
Average	\$15.67	\$12.66	\$14.70	\$18.81	\$15.18	\$12.82

Source: Ruth Ruttenberg & Associates, Inc. Data Base.

TABLE P
Percent of Gross Pay by Category at 4 UMTRA Sites

CATEGORY	COLORADO			NM	TOTAL
	Durango	Grand Junction	Rifle	Ship-Rock	
Carpenter	-	-	1%	-	0%
Cement	-	-		-	0%
Driver	30%	42%	29%	11%	11%
Electrician	-	-	1%	-	0%
Iron Worker	-	-			0%
Laborer	3%	3%	23%	23%	23%
Mechanic	7%	9%	6%	0%	0%
Operator	42%	8%	35%	64%	65%
Other	18%	38%	3%	1%	1%
TOTAL:	100%	100%	98%	99%	101%

Source: Ruth Ruttenberg & Associates, Inc. Data Base.

TABLE Q
Labor Mix at 4 UMTRA Sites, Based on Gross Pay from Certified Payrolls

CRAFT	PERCENT	CRAFT	PERCENT
Operators	38%	Drivers	28%
Laborers	17%	Mechanics	6%
Electricians	1%	Other Crafts	10%
Carpenters	1%	TOTAL	101%

Source: Ruth Ruttenberg & Associates, Inc. Data Base.

TABLE R
Average Hourly Earnings at Four UMTRA Sites

Categories	Colorado			New Mexico	Average Hourly Earning
	Durango	Grand Junction	Rifle	Shiprock	
Carpenter	-	-	\$16.38	\$16.19	\$16.38
Driver	\$16.27	\$12.40	\$16.60	\$13.51	\$16.12
Electrician	\$18.14	-	\$20.79	-	\$20.78
Laborer	\$12.45	\$10.85	\$13.40	\$10.80	\$13.01
Mechanic	\$16.62	\$13.81	\$17.45	\$14.22	\$16.96
Operator	\$16.10	\$13.66	\$15.11	\$14.07	\$15.18
Average ¹	\$15.67	\$12.66	\$15.18	\$12.82	\$14.94

Source: Ruth Ruttenberg and Associates, Inc. Data Base.

¹ Average is overall for all crafts, even those not included in this table. Bog Creek average is especially high due to issues of overtime and call pay.

<div>TABLE S</div> <div>Predominant Remedies by Site</div>															
State	# Remedies Cited	On site Treatment		On Site Containmen t		Off Site Treatment		Off Site Containment		Population Protection		Site Security		Innovative Technology	
Alabama	41	2	5%	1	2%	37	90%	0	0%	0	0%	1	2%	0	0%
Alaska	39	18	36%	7	14%	15	30%	4	8%	3	6%	3	6%	0	0%
Arizona	30	7	26%	9	33%	1	4%	4	15%	0	0%	6	22%	0	0%
California	28	0	0%	0	0%	0	0%	0	0%	0	0%	28	100%	0	0%
Colorado	14	4	33%	2	17%	0	0%	2	17%	1	8%	1	8%	2	17%
Florida	53	18	45%	0	0%	3	8%	16	40%	1	3%	1	3%	1	3%
Illinois	426	25	10%	15	6%	7	3%	189	77%	4	2%	3	1%	1	0%
Indiana	38	2	6%	3	9%	9	27%	14	42%	2	6%	3	9%	0	0%
Kansas	111	81	76%	12	11%	0	0%	5	5%	4	4%	1	1%	3	3%
Louisiana	60	4	10%	9	22%	3	7%	22	54%	0	0%	3	7%	0	0%
Maine	44	10	21%	7	15%	11	23%	8	17%	7	15%	4	9%	0	0%
Maryland	233	16	10%	62	38%	0	0%	70	43%	1	1%	14	9%	0	0%
Massachusetts	640	24	6%	102	27%	0	0%	257	67%	0	0%	0	0%	0	0%
Minnesota	315	83	28%	114	38%	27	9%	45	15%	17	6%	10	3%	1	0%
Mississippi	66	13	27%	5	11%	3	6%	22	47%	1	2%	2	4%	1	2%
Missouri	83	7	13%	7	13%	2	4%	29	52%	0	0%	11	20%	0	0%
Montana	50	3	6%	12	24%	14	28%	14	28%	3	6%	4	8%	0	0%
Nevada	16	11	61%	1	6%	4	22%	2	11%	0	0%	0	0%	0	0%
New Jersey	2,258	37	3%	149	12%	42	3%	1017	79%	2	0%	35	3%	1	0%
New Mexico	19	1	7%	2	14%	2	14%	7	50%	1	7%	1	7%	0	0%
New York	270	22	14%	20	12%	4	2%	111	68%	2	1%	4	2%	0	0%
Ohio	12	6	40%	3	20%	4	27%	1	7%	0	0%	1	7%	0	0%
Oklahoma	66	2	6%	2	6%	0	0%	31	89%	0	0%	0	0%	0	0%
Pennsylvania	8	1	4%	3	11%	20	71%	0	0%	2	7%	2	7%	0	0%
Rhode Island	177	5	5%	0	5%	0	0%	86	95%	0	0%	0	0%	0	0%
South Carolina	54	4	8%	0	0%	14	29%	19	39%	0	0%	11	22%	1	2%
South Dakota	782	0	0%	0	0%	0	0%	391	100%	0	0%	0	0%	0	0%
Tennessee	93	7	13%	8	14%	1	2%	38	68%	0	0%	2	4%	0	0%
Texas	98	23	27%	9	10%	0	0%	12	14%	2	2%	40	47%	0	0%
Utah	25	2	10%	9	45%	1	5%	6	30%	0	0%	2	10%	0	0%
Washington	87	15	18%	24	28%	13	15%	15	18%	14	16%	4	5%	0	0%
TOTAL:	3,999	453	11%	597	15%	237	6%	2437	61%	67	2%	197	5%	11	-

Source: Kensington System, Inc., “State and Territory System Documentation,” August 1994.

TABLE T
Major Remedy in Use, by State

STATE ¹	MAJOR REMEDY BY SITE	% SITE	Average State Cost (millions \$)
Alabama	Off-Site Treatment	90%	7
Alaska	On site treatment	33%	95
Arizona	On site containment	33%	232
California	Site Security	100%	407
Colorado	On site treatment	33%	3,200
Florida	On site treatment	45%	467
Illinois	Off site containment	77%	167
Indiana	Off site containment	42%	168
Kansas	On site treatment	76%	84
Louisiana	Off site containment	54%	41
Maine	Off site treatment	23%	90
Maryland	Off site containment	43%	77
Massachusetts	Off site containment	67%	77
Minnesota	On site containment	38%	128
Mississippi	Off site containment	47%	n.a.
Missouri	Off site containment	52%	43
Montana	Off site containment	28%	253
	Off site treatment	28%	n.a.
Nevada	On site treatment	61%	n.a.
New Jersey	Off site containment	79%	974
New Mexico	Off site containment	50%	681
Ohio	On site treatment	40%	n.a.
Oklahoma	Off site containment	89%	3R
Pennsylvania	Off site treatment	71%	305
Rhode Island	Off site containment	95%	n.a.
South Dakota	Off site containment	100%	n.a.
South Carolina	Off site containment	39%	201
Tennessee	Off site containment	68%	51
Texas	Site Security	47%	701
Utah	On site containment	45%	33
Washington	On site containment	28%	84

Source: Kensington System, Inc., “State and Territory System Documentation,” August 1994.

¹ No information for the following states: CT, DE, MI, NE, NC, OR, VA, WI.

TABLE U
Duration of State Response Actions in Months

States	# Sites	<12 months	12-23 months	24-35 months	36-47 months	48-59 months	60-71 months	>71 months
Alabama	44	35	9	0	0	0	0	0
Alaska	33	28	4	1	0	0	0	0
Arizona	30	22	1	2	2	1	2	0
Colorado	3	3	0	0	0	0	0	0
Florida	24	6	7	3	1	1	2	4
Illinois	209	128	21	11	7	8	8	26
Indiana	15	10	2	1	2	0	0	0
Louisiana	23	5	2	6	7	1	1	1
Maine	34	12	6	5	5	3	1	2
Maryland	40	31	8	1	0	0	0	0
Massachusetts	391	169	118	46	22	10	13	13
Minnesota	80	39	13	14	9	2	0	3
Mississippi	24	3	5	3	11	0	0	2
Missouri	34	13	10	5	2	2	1	1
Nevada	7	4	2	0	1	0	0	0
New Jersey	4,440	3,389	537	208	141	77	36	52
New Mexico	7	5	2	0	0	0	0	0
New York	111	68	17	11	4	7	1	3
Oklahoma	7	5	1	0	0	0	0	1
Pennsylvania	25	16	9	0	0	0	0	0
Rhode Island	10	7	0	2	0	0	1	0
South Carolina	18	15	3	0	0	0	0	0
South Dakota	212	100	38	19	23	7	6	19
Tennessee	43	30	8	1	4	0	0	0
Texas	2	2	0	0	0	0	0	0
Utah	10	5	3	2	0	0	0	0
Washington	28	18	6	1	1	1	1	0
TOTAL:	5,904	4,168	832	342	242	120	73	127

Source: Kensington System, Inc., “State and Territory System Documentation,” August 1994.

TABLE V
State Data
Removal, Remedial, and Last Remedial Phase

Site	# sites	Removals				Remedial Actions										Last remedial phase							
		Ongoing		Complete		Active		No Further Action								PA/SI		RI/FS		RD		RA	
		#	% of Removal	#	% of removal	#	% of removal	#	% of removal	No remedial action based on PA/SI or RI		All remedial action completed ¹		All remedial action completed									
Alaska	41	4	27%	11	73%	11	58%	8	42%	2	25%	3	38%	3	38%	11	55%	0	0%	4	20%	5	25%
Alabama	69	31	45%	38	55%	1	13%	7	88%	7	100%	0	0%	0	0%	0	0%	0	0%	1	100%	0	0%
Arizona	76	8	20%	33	80%	34	46%	40	54%	0	0%	7	18%	33	83%	2	6%	23	74%	3	10%	3	10%
California	1850	20	12%	152	88%	213	26%	600	74%	451	75%	24	4%	125	21%	45	47%	32	34%	13	14%	5	5%
Colorado	11	4	44%	5	56%	5	100%	0	100%	0	0%	0	0%	0	0%	0	0%	2	40%	3	60%	0	0%
Delaware	185	10	91%	1	9%	84	48%	91	52%	91	100%	0	0%	0	0%	78	93%	5	6%	1	1%	0	0%
Florida	36	15	42%	21	58%	13	36%	23	64%	2	9%	6	26%	15	65%	1	7%	4	27%	8	53%	2	13%
Illinois	906	553	73%	207	27%	651	78%	189	23%	2	1%	11	6%	176	93%	1	0%	571	96%	18	3%	3	1%
Indiana	79	27	60%	18	40%	25	93%	2	7%	0	0%	1	50%	1	50%	16	70%	7	30%	0	0%	0	0%
Kansas	183	62	93%	5	7%	179	98%	3	2%	1	33%	2	67%	0	0%	87	49%	42	23%	21	12%	29	16%
Louisiana	101	50	50%	5	50%	69	77%	21	23%	0	0%	2	10%	19	90%	55	83%	10	15%	1	2%	0	0%
Massachusetts	3089	2669	86%	420	14%	2553	83%	536	17%	157	29%	28	5%	351	65%	929	35%	1522	58%	64	2%	110	4%
Maryland	378	4	13%	26	87%	166	44%	212	56%	211	100%	1	0%	0	0%	40	93%	3	7%	0	0%	0	0%
Maine	70	10	29%	25	71%	51	81%	12	19%	3	25%	7	58%	2	17%	32	71%	9	20%	2	4%	2	4%
Michigan	2662	1584	82%	343	18%	1584	60%	1078	41%	735	68%	29	3%	314	29%	0	0%	1701	99%	2	0%	10	1%
Minnesota	414	11	26%	31	74%	293	73%	108	27%	56	52%	35	32%	17	16%	117	41%	95	33%	60	21%	16	6%
Missouri	44	0	0%	23	100%	11	53%	10	48%	0	0%	10	100%	0	0%	1	10%	6	60%	3	30%	0	0%
Mississippi	110	0	0%	17	100%	89	85%	16	15%	8	50%	5	31%	3	19%	25	28%	49	55%	4	4%	11	12%
Montana	214	27	51%	26	49%	169	96%	7	4%	3	43%	0	0%	4	57%	132	77%	39	23%	0	0%	0	0%
Nebraska	15	0	0%	0	0%	15	100%	0	0%	0	0%	0	0%	0	0%	15	100%	0	0%	0	0%	0	0%

TABLE V, Continued
State Data
Removal, Remedial, and Last Remedial Phase

Site	# sites	Removals				Remedial Actions										Last remedial phase							
		Ongoing		Complete		Active		No Further Action								PA/SI		RI/FS		RD		RA	
		#	% of Removal	#	% of removal	#	% of removal	#	% of removal	No remedial action based on PA/SI or RI		All remedial action completed ¹		All remedial action completed									
New Jersey	5996	798	44%	1030	56%	1374	23%	4621	77%	3673	79%	23	1%	925	20%	546	49%	245	22%	267	24%	63	6%
New Mexico	58	1	13%	7	88%	49	98%	1	2%	1	100%	0	0%	0	0%	34	69%	4	8%	11	22%	0	0%
Nevada	34	0	0%	0	0%	24	71%	10	29%	1	10%	2	20%	7	70%	4	23%	5	23%	6	28%	6	28%
New York	556	33	13%	231	88%	442	80%	112	20%	85	76%	16	14%	11	10%	342	78%	66	15%	12	3%	19	4%
North Carolina	873	2	100%	0	0%	646	74%	225	26%	217	96%	5	2%	3	1%	635	98%	9	1%	3	0%	2	0%
Ohio	86	29	78%	8	22%	60	97%	2	3%	0	0%	2	100%	0	0%	25	41%	31	51%	3	5%	2	3%
Oklahoma	40	0	0%	32	100%	4	50%	4	50%	0	0%	3	75%	1	25%	0	0%	3	75%	1	25%	0	0%
Oregon	307	9	36%	16	64%	205	81%	49	19%	41	84%	1	2%	7	14%	165	92%	13	7%	1	1%	1	1%
Pennsylvania	41	13	35%	24	65%	9	100%	0	0%	0	0%	0	0%	0	0%	0	0%	9	100%	0	0%	0	0%
Rhode Island	97	1	1%	82	99%	13	93%	1	7%	0	0%	1	100%	0	0%	2	13%	4	27%	6	40%	3	20%
South Dakota	674	242	40%	372	61%	41	68%	19	32%	0	0%	0	0%	19	100%	0	0%	25	61%	9	22%	7	17%
South Carolina	42	3	16%	16	84%	19	79%	5	21%	1	20%	0	0%	4	80%	6	38%	8	50%	1	6%	1	6%
Tennessee	244	0	0%	40	100%	198	70%	7	3%	3	43%	0	0%	4	57%	153	77%	25	13%	14	7%	6	3%
Texas	200	39	72%	15	28%	151	94%	10	6%	0	0%	7	70%	3	30%	56	33%	89	52%	13	8%	14	8%
Utah	31	1	14%	6	86%	24	96%	1	4%	1	100%	0	0%	0	0%	3	14%	8	36%	8	36%	3	14%
Virginia	21	20	100%	0	0%	0	0%	1	100%	0	0%	0	0%	1	100%	0	0%	0	0%	0	0%	0	0%
Washington	1220	27	59%	19	41%	171	45%	210	55%	76	36%	29	14%	105	50%	291	78%	60	16%	6	2%	15	4%
Wisconsin	1849	0	0%	222	100%	1352	83%	275	17%	0	0%	0	0%	275	100%	36	20%	110	61%	2	1%	31	17%
TOTAL:	22902	6307	-	3527	-	10998	-	8516	-	5828	-	260	-	2428	-	3885	-	4834	-	571	-	369	-

Source: Kensington System, Inc., “State and Territory System Documentation,” August 1994.

¹ Except Operations/Maintenance.

TABLE W
Remedies By States¹
1. On-Site Treatment²

States	A1 Soil Aeration Technologies	A2 Biodegradation	A3 Detonation	A4 Incineration with On-site Disposal of Residual	A5 Incineration with Off-Site Disposal of Residual	A6 pH Neutralization	A7 Component Separation	A8 Thermal Treatment with On-site Placement of Residual	A9 Thermal Treatment with Off-Site Disposal	A 10 Removal to Off-Site Locations After On-Site Treatment	A11 Air Stripping Technologies	A12 Leachate Treatment	A13 Pump and Treat, On-site Disposal	A14 Pump and Treatment, Off-site Discharge	Total
Alabama	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Alaska	7	6	0	1	0	0	1	0	0	1	2	0	0	0	18
Arizona	0	1	0	0	0	1	0	0	0	1	0	0	1	3	7
Colorado	1	0	0	0	0	1	0	0	0	0	0	0	0	2	4
Florida	1	0	0	1	2	0	0	0	0	0	3	0	8	3	18
Illinois	5	1	0	0	4	0	0	0	0	0	2	3	6	4	25
Indiana	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2
Kansas	13	4	0	0	0	0	0	1	0	0	20	1	11	31	81
Louisiana	1	1	0	0	0	0	0	0	0	1	0	0	0	1	4
Maine	3	2	0	0	0	0	0	0	0	0	2	0	0	3	10
Maryland	0	0	1	0	0	0	0	1	0	2	0	3	2	7	16
Massachusetts	0	0	0	0	2	0	1	0	0	0	0	0	21	0	24
Minnesota	12	18	0	1	0	0	2	0	4	0	5	19	2	20	83
Mississippi	1	4	0	0	0	0	0	0	0	0	1	0	0	7	13
Missouri	1	0	0	0	0	0	0	0	0	0	3	0	1	2	7
Montana	0	0	0	0	0	1	0	1	0	0	0	0	1	0	3
Nevada	1	0	0	0	0	0	0	0	0	0	1	0	8	1	11
New Jersey	3	2	0	1	2	2	3	2	1	1	3	1	10	6	37
New Mexico	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1

TABLE W, Continued
Remedies By States¹
1. On-Site Treatment²

States	A1 Soil Aeration Technologies	A2 Biodegradation	A3 Detonation	A4 Incineration with On-site Disposal of Residual	A5 Incineration with Off-Site Disposal of Residual	A6 pH Neutralization	A7 Component Separation	A8 Thermal Treatment with On-site Placement of Residual	A9 Thermal Treatment with Off-Site Disposal	A 10 Removal to Off-Site Locations After On-Site Treatment	A11 Air Stripping Technologies	A12 Leachate Treatment	A13 Pump and Treat, On-site Disposal	A14 Pump and Treatment, Off-site Discharge	Total
New York	2	0	0	1	0	0	0	0	0	0	6	4	2	7	22
Ohio	1	0	0	0	0	0	0	0	0	0	2	1	1	1	6
Oklahoma	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2
Pennsylvania	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Rhode Island	1	0	0	0	0	0	0	0	0	0	4	0	0	0	5
South Carolina	0	1	0	0	0	0	0	0	0	0	1	0	2	0	4
Tennessee	3	0	0	0	0	0	0	0	0	0	3	0	1	0	7
Utah	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
Washington	1	2	0	0	0	1	0	0	0	1	4	1	0	5	15
TOTAL	57	43	2	5	10	9	7	5	5	7	64	33	79	104	430

Source: Kensington System, Inc., "State and Territory System Documentation," August 1994.

¹ 31 states reporting.

² Number of Remedies by Type.

TABLE W
Remedies by States¹
2. Containment²

	ON-SITE								OFF-SITE		
States	B1 Surface Capping	B2 Surface Capping with Slurry wall	B3 Soil Cover	B4 Excavation and On-site Containment	B5 Encapsulation or Overpacking with Final On-Site	B6 Surface Drainage Control	B7 Solidification and Stabilization	B8 Slurry Wall	C1 Excavation and Final Removal to Off-Site Landfill	C2 Encapsulation or Overpacking with Final Off-Site Disposal	C3 Final Removal to Off-Site Landfill
Alabama	0	0	0	0	0	0	1	0	0	0	0
Alaska	0	0	0	5	1	1	0	0	1	1	2
Arizona	3	0	4	0	0	2	0	0	3	1	0
Colorado	0	1	0	0	0	1	0	0	2	0	0
Florida	0	0	0	0	0	0	0	0	13	1	2
Illinois	8	0	0	0	1	2	1	3	70	117	2
Indiana	0	0	0	0	0	1	2	0	2	7	5
Kansas	4	0	2	0	1	2	0	3	3	0	2
Louisiana	1	0	6	1	0	0	1	0	12	7	3
Maine	5	0	1	0	1	0	0	0	2	0	6
Maryland	21	1	24	2	0	10	4	0	26	4	40
Massachusetts	13	0	0	0	0	79	10	0	257	0	0
Minnesota	68	0	31	3	0	9	3	0	29	7	9
Mississippi	1	1	2	0	0	0	1	0	16	0	6
Missouri	4	0	2	1	0	0	0	0	14	13	2
Montana	1	0	3	3	0	4	1	0	12	2	0
Nevada	0	0	0	1	0	0	0	0	2	0	0
New Jersey	107	3	22	9	3	4	0	1	860	8	149
New Mexico	0	0	0	2	0	0	0	0	4	0	3
New York	14	2	1	1	0	1	0	1	50	12	49

TABLE W, Continued
Remedies by States¹
2. Containment²

	ON-SITE								OFF-SITE		
States	B1 Surface Capping	B2 Surface Capping with Slurry wall	B3 Soil Cover	B4 Excavation and On-site Containment	B5 Encapsulation or Overpacking with Final On-Site	B6 Surface Drainage Control	B7 Solidification and Stabilization	B8 Slurry Wall	C1 Excavation and Final Removal to Off-Site Landfill	C2 Encapsulation or Overpacking with Final Off-Site Disposal	C3 Final Removal to Off-Site Landfill
Ohio	2	0	0	0	0	1	0	0	1	0	0
Oklahoma	0	0	0	0	0	0	2	0	6	25	0
Pennsylvania	0	0	0	3	0	0	0	0	0	0	0
Rhode Island	0	0	0	0	0	0	0	0	23	52	11
South Carolina	0	0	0	0	0	0	0	0	5	11	3
South Dakota	0	0	0	0	0	0	0	0	0	391	0
Tennessee	5	0	1	0	0	1	1	0	20	15	3
Texas	4	0	1	1	1	1	0	1	9	0	3
Utah	2	0	5	1	0	0	0	1	6	0	0
Washington	8	0	3	5	0	4	2	2	10	1	4
TOTAL	271	8	108	38	8	123	29	12	1458	675	304

Source: Kensington System, Inc., "State and Territory System Documentation," August 1994.

¹ 31 states reporting.

² Number of remedies by type.

TABLE W
Remedies by States¹
3. Off-site Treatment and other Environmental Issues²

STATES	D1 Incineration and Disposal	D2 Pump and Treat at POTW with Discharge	D3 pH neutralization (Off-Site)	D4 Removal for Off-site Treatment	D5 Thermal Treatment with Disposal Discharge	E1 Alternate Water Supplied (Permanent or Temporary Water supply Reinstated)	E2 Population Relocated (Permanently or Temporary Relocation or Population Returned)	F1 Fence	F2 Guards	F3 Deed Restrictions	G Innovative Technology
Alabama	11	0	1	25	0	0	0	1	0	0	0
Alaska	6	0	0	7	2	3	0	2	1	0	0
Arizona	0	0	1	0	0	0	0	4	1	1	0
California	0	0	0	0	0	0	0	0	0	28	0
Colorado	0	0	0	0	0	1	0	1	0	0	2
Florida	1	0	0	0	2	1	0	0	0	1	1
Illinois	5	1	0	1	0	4	0	1	1	1	1
Indiana	7	2	0	0	0	2	0	3	0	0	0
Kansas	0	0	0	0	0	4	0	1	0	0	3
Louisiana	2	0	0	1	0	0	0	2	0	1	0
Maine	3	1	0	7	0	7	0	4	0	0	0
Maryland	0	0	0	0	0	1	0	11	3	0	0
Massachusetts	1	1	0	1	0	1	0	2	0	0	1
Minnesota	8	5	1	8	5	16	1	10	0	0	1
Missouri	0	0	0	1	1	0	0	5	1	5	0
Montana	4	8	0	2	0	2	1	4	0	0	0
Nevada	1	0	0	3	0	0	0	0	0	0	0
New Jersey	4	3	0	32	3	2	0	18	2	15	1

TABLE W, Continued
Remedies by States¹
3. Off-site Treatment and other Environmental Issues²

STATES	D1 Incineration and Disposal	D2 Pump and Treat at POTW with Discharge	D3 pH neutralization (Off-Site)	D4 Removal for Off-site Treatment	D5 Thermal Treatment with Disposal Discharge	E1 Alternate Water Supplied (Permanent or Temporary Water supply Reinstated)	E2 Population Relocated (Permanently or Temporary Relocation or Population Returned)	F1 Fence	F2 Guards	F3 Deed Restrictions	G Innovative Technology
New Mexico	2	0	0	0	0	1	0	1	0	0	0
New York	0	3	0	1	0	2	0	4	0	0	0
Ohio	0	0	0	4	0	0	0	1	0	0	0
Pennsylvania	0	0	0	20	0	2	0	2	0	0	0
South Carolina	4	0	3	6	1	0	0	10	1	0	1
Tennessee	0	0	0	1	0	0	0	2	0	0	0
Texas	0	0	0	0	0	2	0	40	0	0	0
Utah	1	0	0	0	0	0	0	1	0	1	0
Washington	3	0	1	9	0	14	0	2	0	2	0
TOTAL	63	24	7	129	14	65	2	132	10	55	11

Source: Kensington, System, Inc., "State and Territory System Documentation," August 1994.

¹ 31 states reporting

² Number of Remedies by type.

TABLE X
State Sites By Cost of Cleanup
1. Examples of Removals by Region, with Cost Less Than \$60,000

Region	State	Site Name	Predominant Remedies	Total Cost	Duration In Months
Region I	Maine	Dauphin Disposal Facility	Alternate Water Supplied, Fence, Removal for Off-Site Treatment	\$40,515	12
Region II	New York	West Almond Pesticide Storage Site	Final Removal to Off-Site Landfill	\$36,850	57
Region III	Maryland	Evans Trail Dump Site	Excavation and Final Removal to Off-Site Landfill, Final Removal to Off-Site landfill, Fence, Guards	\$35,007	1
Region IV	South Carolina	Spartan Leasing Co.	Encapsulation or Overpacking with Final Off-Site Disposal, pH neutralization, Removal for Off-Site Treatment	\$34,830	17
Region V	Illinois	Route 122 Spill	Pump and Treat, On-Site Disposal, Excavation and Final Removal to Off-Site Landfill	\$43,464	36
Region VI	New Mexico	Los Lunas Drug Labs	Incineration and Disposal, Excavation and Final Removal to Off-Site Landfill	\$35,000	2
Region VII	Missouri	Robbins Property	Encapsulation or Overpacking with Final Off-Site Disposal	\$26,000	35
Region VIII	Montana	Old Montana Prison Asbestos	Excavation and Final Removal to Off-Site Landfill	\$59,000	*
Region IX	California	Sunrise River Industrial Park	Deed Restrictions	\$35,070	*
Region X	Alaska	Aniak Sewer Spill	Removal to Off-Site Locations After On-Site Treatment, Removal for Off-Site Treatment, Guards	\$48,890	6

* Data not available.

Source: Kensington System, Inc., "State and Territory System Documentation," August 1994.

TABLE X
State Sites By Cost of Cleanup
2. Examples of Remedial Actions by Region, with Cost Less Than \$60,000

Region*	State	Site Name	Predominant Remedies	Total Costs	Duration in Months
Region I	Maine	Merril Transport Company Inc.	Biodegradation	\$18,990	60
Region II	New York	Xerox Corporation Landfill	Surface Capping, Pump and Treat with Discharge Off-Site, Alternate Water Supplied	\$17,332	67
Region V	Minnesota	Trio Solvent	Excavation and Final Removal to Off-Site Landfill	\$40,000	22
Region VI	Louisiana	Acme Tube	Soil Cover, Excavation and Final Removal to Off-Site Landfill	\$1,649	34
Region IX	California	Homart Development Corp/Lot 9	Deed Restrictions	\$24,792	**
Region X	Washington	Elf Atochem - 2901 Taylor Way	Pump and Treat, Off-Site Discharge, Slurry Wall	\$34,748	47

* Data available for sites in 6 regions only

** Data not available.

Source: Kensington System, Inc., "State and Territory System Documentation," August 1994.

TABLE X
State Sites By Cost of Cleanup
3. Example of Removals by Region, with Cost \$100,000 - \$250,000

Region	State	Site Name	Predominant Remedies	Total Costs	Duration in Months
Region I	Maine	North Berwick Municipal Garage	Final Removal to Off-Site Landfill	\$214,000	40
Region II	New York	Depew Manufacturing	Excavation and Final Removal to Off-Site Landfill	\$199,852	2
Region III	Pennsylvania	Crown Industries	Removal for Off-site Treatment , Alternate Water Supplied	\$200,000	12
Region IV	Tennessee	Kennon Site/Genesco	Excavation and Final Removal to Off-Site Landfill, Air Stripping	\$199,555	27
Region V	Indiana	Julius Hancock Property	Excavation and Final Removal to Off-Site Landfill, Incineration and Disposal Off-Site	\$245,000	21
Region VI	Texas	Hageron Rd.	Excavation and Final Removal to Off-Site Landfill, Fence	\$214,000	7
Region VIII	Montana	Apex Mill Bannack Statepark	Excavation and On-site Containment, Surface Drainage Control	\$101,000	*
Region IX	Arizona	Chemonics	Surface Capping, Excavation and Final removal to Off-Site Landfill	\$210,000	26
Region X	Alaska	Sterling Chevron	Soil Aeration	\$166,020	19

* Data not available.

Source: Kensington System, Inc., "State and Territory System Documentation," August 1994.

TABLE X
State Sites By Cost of Cleanup
4. Example of Remedial Actions by Region, with Cost \$100,000 - 400,000

Region*	State	Site Name	Predominant Remedies	Total Cost	Duration in Months
Region I	Maine	Blackstrap Road Site	Alternate Water Supplied	\$338,274	1103
Region V	Illinois	Refinery Products	Excavation and Final Removal to Off-Site Landfill	\$195,453	96
Region VII	Kansas	Crankshaft Die	**	\$112,000	**
Region X	Alaska	Cooks Corner Tesoro	Soil Aeration Technologies	\$294,740	5

* Data available for sites in 4 regions only.

** Data not available.

Source: Kensington, System, Inc., "State and Territory System Documentation," August 1994.

TABLE X

State Sites By Cost of Cleanup
5. Examples of Removal and Remedial Actions by Region, with Cost Over a Million Dollars

State	Site Name	City	Removal or Remedial	Code	Predominant Remedies	Total Dollar	Start Date	Completion Date	Duration in Months
REGION I									
Massachusetts	Mendon Road Site	Attleboro	removal	B	C1	2,315,307	1/15/87	7/15/87	6
REGION II									
New York	Bedford Village Wells Shopping Arcade	-	removal	B/C	-	2,124,988	-	-	-
	Bossert Manufacturing Corp.	-	removal	B/C	-	6,750,000	-	-	-
	Dewy Loeffel	-	remedial	E	B2,C3,F1	1,887,610	11/1/80	8/1/84	48
	Diarsenol Co. Kingsley Park	-	removal	B/C	-	1,998,375	-	-	-
	Edgemore Landfill	-	removal	B/C		4,727,542		-	-
	Gorick Dump	-	remedial	E	A11	1,515,098	10/1/89	3/1/92	29
	Lehigh Valley Railroad Derailment	-	removal	B/C	-	1,903,256	-	-	-
	Madison Wire Company (Orban Industries)	-	removal	B/C	-	5,126,737	-	-	-
	Mahopac Business District Wells	-	removal	B/C	-	1,555,447	-	-	-
	Mead Property	-	removal	B/C	-	1,273,937	-	-	-
	Nanpanoch Paper Mill	-	removal	B/C	-	18,150,058	-	-	-
	Novack Farm	-	removal	B/C	-	3,424,577	-	-	-
	Pfohl Brothers Landfill	-	removal	B/C	-	7,047,627	-	-	-
	Route 146A Barrel Site	-	removal & remedial	B & E	C1,C3	1,071,026	2/1/90	3/1/92	25
	Sweden 3; Chapman	-	removal	B/C	-	4,315,237	-	-	-
	Union Road Site	-	removal	B/C	-	1,571,342	-	-	-

TABLE X, Continued
State Sites By Cost of Cleanup
5. Examples of Removal and Remedial Actions by Region, with Cost Over a Million Dollars

State	Site Name	City	Removal or Remedial	Code	Predominant Remedies	Total Dollar	Start Date	Completion Date	Duration in Months
	Van Der Horst Corporation	-	removal	B/C	-	1,142,103	-	-	-
	Van Der Horst Plant #2	-	removal	B/C	-	1,273,300	-	-	-
	Wallkill Town Landfill	-	removal	B/C	-	1,206,633	-	-	-
	Whitestone Municipal Landfill	-	removal	B/C	-	7,304,770	-	-	-
REGION III									
Pennsylvania	Giordano Waste	Butter Township	removal	B	D4	2,000,000	4/1/89	4/1/90	7
REGION IV									
Florida	Bellevue/Union 76	Bellevue	removal & remedial	B & E	A11,A1,A13,D1, G	1,737,888	8/7/84	7/10/91	83
	k & K Grocery	New Hope	remedial	E	A11,A13,A5,D5	1,334,424	9/1/86	12/4/91	63
	Vroom	Loughman	removal & remedial	B & E	A13,C1	2,728,613	6/88/84	10/12/90	76
	Wacissa	Wacissa	removal & remedial	B & E	A13,D5,E1	1,539,046	6/20/85	9/29/91	75
REGION V									
Michigan	Cass St Area Edwardsburg	Edwardsburg	removal	B	-	1,273,400	-	-	-
	Chief Noonday Archwood	Yankee Springs Twp	removal	B	-	1,117,100	-	-	-
	Forest Lane GW Contamination	Traverse City	removal	B	-	1,338,400	-	-	-
	Former 753 Station Area	Saul Ste Maure	removal	B	-	1,215,000	-	-	-
	Hamburg Unadilla Rds Contam Area	Pinkney	removal	B	-	2,985,350	-	-	-
	Res Well Sable Road	Union City	removal	B	-	1,598,500	-	-	-

TABLE X, Continued
State Sites By Cost of Cleanup
5. Examples of Removal and Remedial Actions by Region, with Cost Over a Million Dollars

State	Site Name	City	Removal or Remedial	Code	Predominant Remedies	Total Dollar	Start Date	Completion Date	Duration in Months
	Res Wells Eben Junction	-	removal	B	-	2,011,000	-	-	-
	Res Wells Rock	-	removal	B	-	2,690,000	-	-	-
	Res Wells Sand Lake	San Lake VLG	removal	B	-	2,023,988	-	-	-
	Res Wells Sashabaw Rd Area	Drayton Plains	removal	B	-	1,052,961	-	-	-
	Res Wells Tekonsha	Tekonsha	removal	B	-	4,037,537	-	-	-
	Res Wells Trenary	-	removal	B	-	1,653,315	-	-	-
	Section 25 Gun Plain Township	Plainwell	removal	B	-	1,460,900	-	-	-
	South Ninthst Vlg of Wells	-	removal	B	-	1,460,000	-	-	-
	Staebler Road GW Contam	Ann Arbor	removal	B	-	2,023,100	-	-	-
	US Aviex Huntley Rd	Niles	removal	B	-	1,044,000	-	-	-
Illinois	Ability Drum	Washington	removal	B	C2	2,129,788	11/30/84	-	0
	Lauder PCB Site	Beardstown	removal	B	C1,D1,A5	3,626,994	11/30/84	-	24
	Steagal Landfill	Galesburg	removal	B/C	F1,F2,A12,A13,B1	3,769,631	11/30/84	12/30/91	66
REGION IX									
California	139 Th Street San Leandro	San Leandro	removal	B/C	-	1,552,435	-	9/30/92	0
	ASARCO	Selby	removal	B/C	-	1,428,233	-	12/21/92	0
	Bay Area Drum Company	San Francisco	removal	B/C	-	4,299,099	-	7/30/90	0
	Brown & Bryant Shafter Facility	Shafter	removal	B/C	-	1,170,241	-	11/30/92	0
	Chatham Brothers Barrel Yard	Escondido	removal	B/C	-	8,684,139	-	6/30/90	0

TABLE X, Continued
State Sites By Cost of Cleanup
5. Examples of Removal and Remedial Actions by Region, with Cost Over a Million Dollars

State	Site Name	City	Removal or Remedial	Code	Predominant Remedies	Total Dollar	Start Date	Completion Date	Duration in Months
	Chico Groundwater Central Plume	Chico	removal	B/C	-	3,658,842	-	7/1/90	0
	Chico Groundwater Southwest Plume	Chico	removal	B/C	-	3,658,842	-	1/30/92	0
	Chromalloy General Radiator	Sacramento	removal	B/C	-	1,221,077	-	12/30/87	0
	Cook Battery Coakley Battery	Oakley	removal	B/C	-	1,360,446	-	6/29/92	0
	Folsom Prison	Represa	removal	B/C	-	1,137,129	-	9/30/88	0
	Gatx Annex Terminal San Pedro	San Pedro	removal	B/C	-	1,169,871	-	11/9/92	0
	Hillview - Eleanor Arca Plume	Los Altos	removal	B	-	1,576,754	-	11/6/92	0
	Jensen Lumber Company	Hyampon	removal	B	-	1,670,915	-	6/30/89	0
	L & M Planting	Oakland	removal	B	-	1,062,903	-	3/31/89	0
	Lubrication Company of America	Canyon Country	removal	B/C	-	4,132,270	-	6/30/92	0
	North San Bernardino Area	San Bernardino	removal	B/C	-	4,316,685	-	8/30/90	0
	Rio Bravo Disposal Facility	Shafter	removal	B/C	-	1,297,507	-	6/30/92	0
	Southland Oil	Commerce	removal	B/C	-	1,311,656	-	10/29/92	0
	SP, SAC - Ponds and Ditch	Sacramento	removal	B/C	-	1,629,295	-	6/15/92	0
	Summer del Caribe, Inc.	Richmond	removal	B/C	-	1,629,295	-	6/15/92	0
	Valley Planting Company	Central Valley	removal	B	-	1,851,924	-	6/30/90	0
	Verticare Helicopters	Salinas	removal	B	-	1,469,591	-	12/15/92	0

Source: Kensington, System, Inc., "State and Territory System Documentation," August 1994.

Code B - Completed Removal

Code C - Active Remedial

Code E - Completed Remedial Action

TABLE Y
Remedial Action Jobs by Craft for All UMTRA Sites

Craft	Percent Gross Pay Earned	Average Hourly Wage	Number of Remedial Action Jobs
Driver	28%	\$16.12	2,935
Electrician	1%	\$20.78	81
Laborer	17%	\$13.01	2,208
Mechanic	6%	\$16.96	598
Operator	38%	\$15.18	4,230
Other Crafts	10%	\$14.94	1,131
TOTAL	100%	-	11,183

Source: Ruth Ruttenberg & Associates, Inc. Data Base.

TABLE Z
Remediation Costs by State (in Descending Order by Cost)

States	# Sites	Total Cost	Average State Cost
Colorado	1	3,200,000	3,200,000
Virginia	2	2,500,000	1,250,000
New York	210	211,266,459	1,006,031
New Jersey	1,115	343,694,743	974,329
Kansas	16	33,053,000	835,000
Texas	16	17,464,000	701,076
Florida	25	12,184,849	487,394
California	223	90,792,505	407,141
Michigan	496	159,226,582	321,021
Pennsylvania	27	8,120,000	304,615
Montana	4	1,010,000	253,333
Arizona	61	32,139,733	231,929
South Carolina	35	7,036,201	201,034
Indiana	11	1,682,128	168,113
Illinois	513	126,459,118	167,227
Minnesota	178	92,525,000	127,562
Alaska	41	3,645,801	95,161
Maine	31	3,337,516	89,742
Washington	131	10,944,364	83,545
Maryland	14	2,036,816	77,469
Massachusetts	33	2,553,857	77,390
Delaware	18	1,255,500	69,750
New Mexico	3	5,135,000	67,500
Tennessee	72	6,719,579	51,175
Missouri	8	11,218,000	42,667
Louisiana	24	985,483	41,062
Utah	6	14,130,389	32,597
Alabama	26	190,000	7,308
Wisconsin	183	939,021	5,131
Oklahoma	29	85,590	2,951
TOTAL:	3,552	1,205,531,234	-

Source: Kensington System, Inc., “State and Territory System Documentation,” August 1994.